

Appl. No. 10/727,755
Amdt. Dated 01/28/2005
Reply to Office Action of November 3, 2004

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Original) A shaker comprising:

a sealed shaker housing

a permanent magnet assembly supported within the housing for vibratory translation along an axis of the permanent magnet assembly, the permanent magnet assembly having a permanent magnet magnetized parallel to the axis, and first and second pole pieces spaced apart along the axis at first and second ends of the permanent magnet;

first and second wire coils spaced adjacent and outward from a periphery of the first and second pole pieces, respectively, and secured to an inner wall of the shaker housing;

the permanent magnet assembly having at least one electrically conductive shorting ring supported on the permanent magnet assembly adjacent at least one of the wire coils;

a first tubular coil fastened to the permanent magnet assembly and flexibly coupled to ports on the shaker housing through which a fluid may be circulated for heating or cooling of the permanent magnet assembly;

a second tubular coil fastened to the shaker housing and coupled to ports on the shaker housing through which a fluid may be circulated for heating or cooling of the permanent magnet assembly;

the shaker housing being adapted for coupling to a shaker table or an article to be tested.

2. (Original) The shaker of claim 1 wherein the first tubular coil and the second tubular coil are coupled in parallel.

3. (Original) The shaker of claim 1 wherein the at least one electrically conductive shorting ring is comprised of first and second shorting rings, each being supported on the permanent magnet assembly adjacent a respective one of the wire coils.

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4. (Original) The shaker of claim 3 wherein the first tubular coil comprises first and second first tubular coil sections connected in series, each coupled to a respective one of the first and second shorting rings.

5. (Original) The shaker of claim 4 wherein the first and second first tubular coil sections are formed from a single length of tubing.

6. (Original) The shaker of claim 1 wherein the second tubular coil is fastened to the external periphery of the housing adjacent the wire coils.

7. (Original) The shaker of claim 1 wherein the permanent magnet assembly is supported within the housing on convoluted epoxy graphite laminate diaphragms.

8. (Original) The shaker of claim 1 wherein opposite faces of the shaker housing are adapted for coupling to a shaker table or an article to be tested.

9. (Original) The shaker of claim 8 further comprised of an adapter configured to be fastened to one face of the shaker and to be fastenable to a second adapter fastened to an identical shaker.

10. (Original) First and second shakers, each in accordance with claim 9, the first and second shakers being fastened together with the axes of the permanent magnet assemblies being coaxial.

11. (Original) A shaker comprising:
a sealed shaker housing having a round housing body defining a shaker axis, and first and second end caps;

a permanent magnet assembly supported within the housing for vibratory translation along the shaker axis, the permanent magnet assembly having a cylindrical permanent magnet magnetized in a direction parallel to the shaker axis, and first and second pole pieces spaced apart along the shaker axis and abutting first and second ends of the permanent magnet;

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first and second wire coils spaced adjacent and outward from a periphery of the first and second pole pieces, respectively, and secured to an inner wall of the shaker housing;

the permanent magnet assembly having at least one electrically conductive shorting ring supported on the permanent magnet assembly adjacent at least one of the wire coils;

a first tubular coil fastened to the permanent magnet assembly and flexibly coupled to ports on the shaker housing through which a fluid may be circulated for heating or cooling of the permanent magnet assembly;

a second tubular coil fastened to the shaker housing and coupled to ports on the shaker housing through which a fluid may be circulated for heating or cooling of the permanent magnet assembly;

the shaker housing being adapted for coupling to a shaker table or an article to be tested.

12. (Original) The shaker of claim 11 wherein the first tubular coil and the second tubular coil are coupled in parallel.

13. (Original) The shaker of claim 11 wherein the at least one electrically conductive shorting ring is comprised of first and second shorting rings, each being supported on the permanent magnet assembly adjacent a respective one of the wire coils.

14. (Original) The shaker of claim 13 wherein the first tubular coil comprises first and second first tubular coil sections connected in series, each coupled to a respective one of the first and second shorting rings.

15. (Original) The shaker of claim 14 wherein the first and second first tubular coil sections are formed from a single length of tubing.

16. (Original) The shaker of claim 11 wherein the second tubular coil is fastened to the external periphery of the housing adjacent the wire coils.

17. (Original) The shaker of claim 11 wherein the permanent magnet assembly is supported within the housing on convoluted epoxy graphite laminate diaphragms.

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18. (Original) The shaker of claim 11 wherein opposite faces of the end caps are adapted for coupling to a shaker table or an article to be tested.

19. (Original) The shaker of claim 18 further comprised of an adapter configured to be fastened to one face of the shaker housing and to be fastenable to a second adapter fastened to a similar shaker.

20. (Original) First and second shakers, each in accordance with claim 19, the first and second shakers being fastened together with the axes of the permanent magnet assemblies being coaxial.

Claims 21-31 (Canceled)